

THE DISRUPTIVE EFFECTS ON GROWTH, DEVELOPMENT AND BEHAVIOR IN FRUIT FLIES
(*Drosophila melanogaster*) EXPOSED TO PENTACHLOROPHENOL. Tyler Beyett and Gary M. Lange*.
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Pentachlorophenol (PcP) has been used since the 1930s in many different biocidal roles. Since the 1980s, PcP has been primarily used as a wood preservative for utility poles and railroad ties, extending the product life of the wood from 5 years to 30. Recent research has begun to call into question the safety of PcP treated lumber for workers and in the environment. There is evidence that PcP leaches significantly out of the wood and can contaminate local water sources especially in climates with high precipitation and/or soils that hold and retain water readily. Manufacturing processes have produced both pressure-treated and non-pressure treated lumber using PcP as a preservative, but evidence suggests non-pressure treated lumber poses the greatest risk as the PcP solution is applied only to the outer surface of the wood and can readily wash off. PcP has been extensively studied in aquatic organisms where it has been shown to affect various behaviors and interfere with molting. In the present study we report on the developmental effects of PcP on fruit flies (*Drosophila melanogaster*). Fruit flies were selected due to the species long record of historical and modern use in the study of development. Our research indicates that PcP delays the development of the larval stages of development in the fly. Additionally, delays are noted in the transition from larva into pupae, and there appears to be behavioral effects noticeable at different stages of development. As an endocrine disrupting compound, it may be that PcP may have an agonistic role in neural development.